UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

MAR 7 2006

SUBJECT: Approval of a Request for Funds for a Removal Action at the Pinch Drum Dump Site
Pinch, Kanawha County, West Virginia

FROM: Abraham Ferdas, Director
Hazardous Site Cleanup Division (3HS00)

TO: Thomas Dunn, Acting Assistant Administrator
Office of Solid Waste and Emergency Response (5101)

THRU: Debbie Dietrich, Director
Office of Emergency Management

ATTN: Gilberto Irizarry, Director
Program Operations & Coordination Division

ISSUE

The attached Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) funding request pertains to the Pinch Drum Dump Site (Site) located just outside the town of Pinch, Kanawha County, West Virginia. A removal assessment performed in accordance with the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), 40 CFR Part 300.410 has identified a threat to public health or welfare or the environment due the uncontrolled presence of hazardous substances, pollutants, or contaminants at the Site.

The OSC has determined that this Site meets the criteria for a removal action under Section 300.415 of the NCP. Funds have been requested in the amount of $1,064,280, of which $807,900 are Regional Removal Allowance Costs, to mitigate the threats posed by the Site. Pursuant to delegation of authority 14-2 to approve CERCLA Removal Actions costing up to $2 million and actions up to 12 months, Region III has approved this request.

Attachment: Funding Request

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SUBJECT: Request for Funding a Removal Action at the
Pinch Drum Dump Site
Pinch, Kanawha County, West Virginia

FROM: Christine Wagner, On-Scene Coordinator
Removal Response Section (3HS2)

Fran Burns for CW

TO: Abraham Ferdas, Director
Hazardous Site Cleanup Division (3HS00)

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for a time-critical Removal Action to mitigate the release and threatened release of hazardous substances and/or pollutants or contaminants from buried drums in a residential area outside of the town of Pinch, Kanawha County, West Virginia. The drums were discovered when a resident began excavation for construction of a new home. A follow-up assessment performed by the West Virginia Department of Environmental Quality revealed the presence of hazardous substances in quantities which may pose an imminent and substantial risk to public health or welfare. A removal assessment performed by the OSC in accordance with the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), 40 CFR Part 300 has identified a threat to public health or welfare or the environment due the uncontrolled presence of hazardous substances and/or pollutants or contaminants at the Site.

II. SITE CONDITIONS AND BACKGROUND

A. SITE DESCRIPTION

1. Removal Site Evaluation

The Site is located on a ten acre residential property located near the town of Pinch in northeastern Kanawha County, West Virginia. The areal extent of the Site may increase as additional contamination is found. The owner acquired the property in 1999 with the intention of constructing a new home for residential use. During excavation for the new dwelling, the owner encountered buried drums emitting a strong chemical odor. The owner collected a sample from one of the drums and arranged for analysis by a local laboratory. The analysis revealed the

presence of volatile organic compounds including trichloroethane, toluene, ethylbenzene, butylbenzene, and naphthalene. The owner ceased excavation operations on the property.

Counsel for the property owner contacted the West Virginia Department of Environmental Protection (WV DEP) for notification and assistance. In the spring of 2003, waste management inspectors from WV DEP visited the Site and visually verified unknown materials seeping from the area and the presence of chemical odors. The WV DEP emergency response unit was notified and performed a follow-up assessment of the Site in June of 2003. WV DEP officials observed evidence of drums and trash extruding from the surface soils on the Site. According to the resident, these drums were not visible prior to excavation activities. In the summer of 2003, WV DEP representatives collected samples from two buried drums, a leachate sample, and a groundwater well sample. The results from this sampling substantiated the previous sampling performed by the property owner. The WV DEP has requested EPA assistance to investigate and perform necessary response actions.

2. Physical Location/Site Characteristics

The property to be addressed by this Action Memo is owned by a private resident and is spans an area of ten acres. The property encompasses a series of parcels acquired from a previous owner.

The Site is located in a sparsely populated section of the town of Pinch in Kanawha County, WV, on a hillside to which no paved roads currently exist. Three residential properties are located directly downgradient from the Site. Further down the hill county roads traverse through the area. The residents in the area use groundwater wells for potable water.

3. Quantities and Types of Substances Present

In 2003, the WV Department of Environmental Protection performed a sampling assessment at the Site. This sampling assessment included the collection of samples from two protruding 55-gallon drums, a sample of the leachate emanating from the drum area, and a sample of a groundwater well 58 feet below surface.

The sample analyses revealed the presence of a myriad of hazardous substances including volatile organic compounds, semi-volatile organic compounds, and metals. The results suggest mixed wastes were disposed at this location.

Naphthalene, a volatile organic compound with the odor of moth balls, was detected in the drum samples and also in the leachate sample. This finding suggests that this hazardous substance has been released into the environment. Naphthalene is the primary constituent of coal tar. Acute human exposure to naphthalene can cause irritation to the eyes, nose, and throat. Exposure to very high levels can cause headaches and nausea and can also damage red blood cells, resulting in a low red blood count (hemolytic anemia). Chronic exposures may include

skin allergies and clouding of the eye lens.[1] Naphthalene is a listed hazardous substance under 40 CFR Table 302.4.

Besides naphthalene, other volatile organic compounds including toluene (449 micrograms/kilogram (µg/kg)) and 1,2,4 trimethylbenzene (404 µg/kg) were also found in the leachate. Interestingly, toluene was not detected in either of the drum samples. This finding suggests that other containers are present which may be leaking. Toluene is not a naturally occurring contaminant. Significant research literature is available on the hazards of toluene in the workplace. Observed effects from acute exposure range from fatigue, headache, and decreased manual dexterity to more detrimental effects in higher doses. Chronic exposure to toluene can lead to changes in neurological functions including cognitive and neuromuscular performance, hearing, and color discrimination in chronically exposed workers. Studies of toluene-exposed animals revealed exposure can affect behavior hearing loss, and subtle changes in brain structure and brain chemistry.[2] Toluene is a listed hazardous substance under 40 CFR Table 302.4.

The characteristics of the unknown materials in the two drums are varied. One drum contains naphthalene, trichloroethylene (commonly known as "TCE"), and phenol. All of these substances are toxic; yet, they are not collectively typical of a single product or mixture. This suggests that a variety of hazardous substances have been dumped in the area.

The hazards of naphthalene are discussed above. Trichloroethylene is commonly found in industrial degreasers, solvents, and dry cleaning products. The presence of trichloroethylene in subsurface soils and groundwater poses remediation challenges because the substance is both insoluble and heavier than water. Trichloroethylene is toxic by inhalation, absorption, and ingestion. Trichloroethylene is a popular narcotic for individuals who habitually inhale solvents. Because repeated inhalation can cause feelings of euphoria and hallucinations, TCE can become addictive. Adverse effects from inhalation exposure can include bronchial irritation, pulmonary edema, restlessness, impaired concentration, and confusion. Effects from ingestion can include nausea, vomiting, diarrhea, jaundice, dizziness, or distorted perceptions. The main systemic response is CNS depression.[3] Trichloroethylene was detected in a concentration of 42.8 milligrams/kilogram (mg/kg). Although this concentration is below worker ceiling concentrations (300 mg/kg), the National Institute for Occupational Safety and Health ("NIOSH") considers this substance to be a potential occupational carcinogen.

One of the drum samples also contained phenol at a concentration of 995 milligram/kilogram (mg/kg). Phenol is a corrosive substance which is toxic by inhalation,

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[1]AQUIRE Database, ERL-Duluth, US. EPA, 1986

[2]ATSDR Toxicological Profile for Toluene, May, 2001

[3] Hazardtext, Micromedex, 1974-20053

absorption, or ingestion. Most exposures result from the inhalation of vapor. However, ingestion of as little as one gram can cause death.[4] Symptoms of chronic inhalation exposure may include headache, cough, weakness, fatigue, anorexia, vomiting, insomnia, and nervousness. Chronic exposures have been reported to cause death from liver and kidney injuries. Phenol may also affect the pancreas and heart muscle. In genotoxicity studies, phenol has caused DNA damage, mutations, and chromosomal aberrations. NIOSH has a 19 mg/m^3 exposure limit for workers exposed to phenol. The concentration found in the sample collected from the Site was 995 mg/kg. Phenol is a listed hazardous substance under 40 CFR Table 302.4.

The other drum sampled by WV DEP contained a mixture of volatile organic compounds (ethylbenzene (28.4 mg/kg), 1,2,4 trimethylbenzene (26.8 mg/kg), xylene (41.9 mg/kg)) and also metal compounds including chromium (12.2 mg/kg) and lead (48.8 mg/kg). Although none of these values are excessively high, the condition of the drums and the unknown fate of the compounds reveals that these substances are present in unknown amounts. Ethylbenzene, xylene, chromium, and lead are all listed as hazardous substances under 40 CFR Table 302.4. Based on its toxicological hazards, trimethylbenzene is a pollutant or contaminant.

One sample was collected from a groundwater well 58 feet below surface. Two contaminants of interest were discovered in this sample. 1,2 Dichloroethane was detected in a concentration of 2.5 milligram/liter (mg/L). The published EPA maximum concentration limit (MCL) for 1,2 dichloroethane in drinking water is 0.005 mg/L.

Trichloroethylene was also detected in the well sample at a concentration of 1.8 mg/L. The published EPA MCL for trichlorethylene is 0.005 mg/L. At this time, this well is not being used for drinking water. However, groundwater wells are the primary source of drinking water in the area.

Trichloroethylene and 1,2 Dichloroethane are listed as hazardous substances under 40 CFR Table 302.4.

4. National Priorities List

The Site is not on the CERCLA National Priorities List (NPL). The OSC is coordinating with the Site Assessment Manager (SAM) for West Virginia to assist in evaluating the potential for NPL eligibility. The OSC will make every effort to obtain sufficient information for the SAM to perform a Hazard Ranking System evaluation.

5. State and Local Authorities' Roles

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[4]Id.

The West Virginia Department of Environmental Protection has performed an assessment of the Site and has requested EPA assistance. EPA will coordinate with the Kanawha County Emergency Management Agency once a plan of action has been finalized.

f. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant

The sampling performed by WV DEP verifies that a release of hazardous substances and pollutants or contaminants has occurred. Concentrations of naphthalene, toluene, cresol, 1,2,4 trimethylbenzene and chromium have been found in the leachate from the buried containers. Furthermore, 1,2 dichloroethane and trichloroethylene have been detected in a groundwater well. These substances were also detected in buried drums at the Site. Based on this information, the OSC concludes that a release of hazardous substances and/or pollutants or contaminants into the environment has occurred.

g. Maps, Pictures, and other Graphic Representations

Because the property is residential, maps are not included in this document to protect the privacy of the resident and surrounding residents.

B. OTHER ACTIONS TO DATE

1. Previous Actions

There are no previous reported actions at the Site. The WV Department of Environmental Protection performed a sampling assessment in 2003 which revealed the results discussed in this memorandum. During the removal action, the OSC plans to collect any information available from the buried containers to identify potentially responsible parties.

b. Current Actions

There are no current removal actions at the Site. The property owner has halted construction on the property pending further investigation by EPA.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Section 300.415 of the National Contingency Plan (NCP) lists the factors to be considered in determining the appropriateness of a removal action. At this time, the following sections apply:

§ 300.415(b)(2)(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

Based on the Site conditions and the toxicity hazards of the hazardous substances identified, the potential for exposure to humans, animals, or the food chain remains high.

Site access is completely unrestricted. The Site is located in a sparsely populated residential area. However, the nearest residence is located approximately 200 yards directly downgradient from the Site. The Site sits along a ridge several hundred feet above the nearest road. Hence, all runoff from the Site leads to the residential area and roads traversing through the area.

The hazardous substances identified in the drums, leachate, and well all have toxic properties. Accidental exposure to the drums could result in acute exposure as well as permanent injury. Furthermore, the danger is magnified by the topography. If a person were to be overcome by vapors from the buried drums, he or she could lose balance and topple down the ridge, increasing potential injuries.

Furthermore, accidental ingestion or dermal exposure is possible due to the leaking drums. The concentrations of hazardous substances in the leachate verify that the drums are leaking into unknown areas.

§ 300.415(b)(2)(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

The residents in the area depend on well water. Further testing is needed to determine if the release of hazardous substances has impacted any of the drinking water wells in the area. Two hazardous substances, 1,2 dichloroethane and trichloroethylene, have been detected in concentrations well above the EPA published maximum contaminant levels for drinking water systems.

§ 300.415(b)(2)(iii) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

An unknown number of buried drums are present at the Site. Additional testing is needed to identify the total quantity of containers. These drums are suspected to contain a variety of hazardous substances including, but not limited to, volatile organic compounds, semi-volatile organic compounds, and metals. All of these substances can be toxic by inhalation, absorption, or ingestion. Releases from the containers are known to have occurred because hazardous substances and pollutants or contaminants have been detected in both the containers and in leachate and well samples.

§ 300.415(b)(2)(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

A leachate sample collected near the drums indicated the presence of naphthalene, toluene, cresol, and chromium, all listed hazardous substances. Both naphthalene and chromium were also found in the drum results. These results verify that a release has occurred and that the hazardous substances are migrating. Furthermore, the Site is situated on a hillside. All runoff from the Site leads downgradient to a residential area.

§ 300.415(b)(2)(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

The sampling data supports the conclusion that a release of hazardous substances has occurred. The drums and other containers are not secured in any way and there are no physical or natural barriers around the Site. The Site is situated on a hillside several hundred feet above the nearest road. Weather will naturally cause the hazardous substances to migrate to other areas.

§ 300.415(b)(2)(vi) Threat of fire or explosion;

Many of the hazardous substances identified are flammable. These include toluene, naphthalene, xylene, and 1,2,4 trimethylbenzene. All of these substances have flash points less than 200°F. Toluene and xylene have flash points less than 100°F. A careless cigarette tossed in the mix could start an uncontrollable fire. The proximity of the Site on a hillside would make fire response difficult as there are no paved roads to the Site. A fire could spread rapidly and impact the neighboring community.

§ 300.415(b)(2)(vii) The availability of other appropriate federal or state response mechanisms to respond to the release;

The WV Department of Environmental Protection has requested EPA assistance with the Site as they do not have the resources currently available to perform a removal action of this magnitude at this time. The property owner also does not have the financial resources to conduct a removal action. No other federal or state response mechanisms are currently available to perform the actions necessary to mitigate the threats to public health and the environment presented by the release and threatened release of hazardous substances and pollutants and contaminants.

IV. ENDANGERMENT DETERMINATION

Actual and threatened releases of hazardous substances and/or pollutants or contaminants from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

1. Proposed Action Description

The objectives of the proposed action are threefold: 1) determine the extent of buried containers; 2) remove buried containers which may contain hazardous substances, pollutants, or contaminants; 3) assess the environmental impact from the released substances and the actions necessary to mitigate any resulting threats to public health, welfare, or the environment. The OSC intends to implement the proposed action as follows:

a. Construct temporary roads to gain access to the Site for vehicles and heavy equipment;

b. Conduct subsurface investigation to identify the location of buried containers;

c. Excavate buried containers such as drums, pails, tanks, and other containers suspected to contain hazardous substances and/or pollutants or contaminants;

d. Remove soil contaminated with hazardous substances such that the risks presented by the remaining soil do not exceed a 1×10^{-4} cancer risk and a hazard quotient greater than one;

e. Segregate, stage, and sample all materials excavated and recovered pursuant to (c) and (d), above.

f. Properly dispose of hazardous substances and pollutants or contaminants recovered pursuant to (c) and (d), above, at an off-site disposal facility in accordance with 40 CFR § 300.440 and Section 121(d)(3) of CERCLA;

g. Perform sampling of residential drinking water wells in the area to determine if residents are at risk for exposure to hazardous substances, pollutants, or contaminants;

h. Perform post-excavation sampling to determine remaining extent of contamination.

2. Contribution to Remedial Performance

The actions proposed will contribute to any future remedial actions which may be necessary at the Site.

3. Applicable or Relevant and Appropriate Requirements (ARARs)

The proposed removal action will attain ARARs to the extent practicable given the exigencies of the situation. As the extent of contamination and full identification of the contaminants has not yet been defined, State ARARs cannot be identified at this time. However, a copy of the signed action memo will be provided to the WV DEP. Also, pending adequate characterization of the Site or within 15 days of Site mobilization, the OSC will prepare a letter in writing to WV DEP requesting that State ARARs be provided in writing.

B. Estimated Costs

The proposed distribution of funding is as follows:

Extramural Costs	
Regional Allowance Costs (This cost category includes estimates for ERRS contractors, subcontractors, letter contracts, orders for services, notices to proceed, alternative technology contracts, and inter-agency agreements with other Federal Agencies)	$807,900
Other Extramural Costs Not Funded from the Regional Allowance START Contractor Total CLP Local Rental Agreements	 $44,000 $25,000 $10,000
Subtotal, Extramural Costs	$886,900
Extramural Costs Contingency (20% of Subtotal, Extramural Costs)	$177,380
TOTAL REMOVAL ACTION PROJECT CEILING	$1,064,280

VI. EXPECTED CHANGE IN SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the proposed actions at the Site are not implemented or are delayed, there exists the possibility of human exposure of children and adults living in the area.

VII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues at this Site.

VIII. ENFORCEMENT

Based on the information currently available, it is recommended that Superfund monies be allocated to complete the removal activities at the Pinch Drum Dump Site. A confidential enforcement addendum has been prepared and is included as an attachment to this document.

The total EPA costs for this removal action based upon full-cost accounting practices that will be eligible for cost recovery are estimated below as follows:

Direct Extramural Costs:	$1,064,280
Direct Intramural Costs:	$ 40,000
Indirect Costs	$ 608,126
Estimated EPA Costs for the Removal Action	$1,712,406

IX. RECOMMENDATION

Because conditions at the Pinch Drum Dump Site meet the Removal Action requirements of the NCP, I recommend your approval of the proposed Removal Action. The total Removal Action Project Ceiling, if approved, will be $1,064,280. Of this, an estimated $807,900 comes from the Regional Removal Allowance. Please indicate your approval or disapproval on the next page.

Action by the Approving Official:

I have reviewed the above-stated facts and based upon those facts and the information compiled in the documents described above, I hereby determine that the release or threatened release of hazardous substances at and/or from the Site presents or may present an imminent and substantial endangerment to the public health or welfare or to the environment. I concur with the recommended removal action as outlined.

APPROVED

Abraham Ferdas, Director
Hazardous Site Cleanup Division
EPA Region 3

2/22/06
Date

Attachment: Enforcement Confidential Memo